

Chapter 17, entitled "Guide to American Hardwood Trees" is original and unique and will be of great assistance in identification. In this chapter the trees are grouped under such headings as "Trees That Bear Pods," "Trees That Bear Spines or Thorns," "Trees Whose Leaves Turn Yellow in Autumn," "Trees That Bear Berries," and many other similar headings.

Mr. Illick, the author of "Pennsylvania Trees," "Trees Every Boy Should Know," "Fifty Common American Trees," "The Scout's First Book of Forestry," "Guide to Forestry," and many other articles on forestry, has made a life-long study of trees and has spent fifteen years in teaching boys and girls and grown-up folks how to know our trees, and how to understand their habits and to interpret their peculiar behaviors. This long study and experience in writing and teaching has fittingly prepared him to present to humanity "Tree Habits" in the popular humanizing, though scientific, style in which no other book on trees and forestry has before been written.

The book will be read and enjoyed not only by botanists and foresters but also by the layman and the student. It will prove very useful as a supplementary book in High School, College and University courses in Botany and, without doubt, will be adopted as a textbook by many Schools of Forestry.

E. M. GRESS, State Botanist.

HARRISBURG, PA.

## PROCEEDINGS OF THE CLUB

MEETING OF OCTOBER 29, 1924

The meeting of this date was held at the New York Botanical Garden. Three new candidates were elected to membership as follows:

Dr. Charles McCoy, Presbyterian Hospital, 41 E. 70th St., New York, N. Y.

Dr. Arthur P. Kelley, Rutgers University, New Brunswick, N. J.

Mr. Otto Degener, N. Y. Botanical Garden, Bronx Park, New York.

The first part of the scientific program was by Mr. Otto Degener on "Plant Collecting in Hawaii." Basing his computa-

tions upon Hillebrand's flora, the only comprehensive book in existence on Hawaiian plants, he stated that of the 850 species of vascular plants in Hawaii, 75% are endemic. And of this number 250 belong to about 40 endemic genera. This high percentage of endemism is due partly to the isolation of the entire group of islands, and partly to the isolation of each island from the other by stretches of ocean 10 to 75 miles in extent. Another factor is the range in temperature from that of the tropics at sea level to that of regions of everlasting snow on the mountain peaks. A third is the range in rainfall from almost nothing in the desert to over 400 inches on the highlands of Kauai. The floral affinity curiously enough is not with America, the nearest continent, but rather with Indo-Malaysia.

The variable Mesquite, early introduced by a priest and now spread throughout the arid lowlands, has become of great value. Endemic species of *Lobeliaceae* are numerous, *Rollandia* and *Clermontia* being two of the endemic genera. In areas where the mountains are deeply eroded, the Candlenut tree, *Aleurites moluccana*, is conspicuous by its glaucous foliage, while near the rain-forest grow different *Eugenias* and *Metrosideros*. In the rain-forest itself the tree trunks are plastered over with filmy ferns, *Ophioderma pendulum*, and the epiphytic *Lycopodium phyllanthum*. In such places also grow remarkable tree violets. Treeferns, such as *Cibotium Menziesii*, are plentiful. Their soft, downy ramentum or *pulu* was formerly used for stuffing mattresses.

Near Kilauea Volcano a different type of vegetation occurs. Both *Psilotums* are found here as well as two of the three endemic orchids. Very few *Rosaceae* appear, the commonest being *Fragaria chiloensis* and *Rubus rosaefolius*. Other common plants in the ashfields are *Lycopodium cernuum* and *L. venustum*, *Gleichenia*, *Cyathodes Tameiameiae*, and *Vaccinium reticulatum* or Ohelo berry, which is eaten by the Hawaiian goose. A typical composite of this region is *Raillardia scabra*, noteworthy for its relationship to a Californian genus. Strange areas in the vicinity are the kipukas or "oases," i. e., regions that have escaped the numerous lava flows. Here many of the rarest plants may be found.

In the discussion which followed, Mrs. Britton remarked that it was most interesting to find plants here identical with those in the West Indies, e. g., *Psilotum nudum*.

Dr. Michael Levine next gave a short talk entitled "Studies in Plant Cancers."

Crown gall was produced in Bryophyllum leaves by inoculations of the buds in the notches of the leaves with *Bacterium tumefaciens*. On 48 leaves thus inoculated, 199 globular crown galls were formed and only 31 crown galls showed leafy shoots; that is, one crown gall with leafy shoots developed to every eight crown galls of the globular type. Twelve uninoculated leaves growing under conditions which favored the development of the marginal buds, produced 106 shoots on these leaves. A short report on this subject appears in the November number of the Bulletin of the Torrey Botanical Club.

A report on the development of secondary tumors was also given. So-called secondary tumors have been found at points distant from the original place of inoculation. This is due to the fact that the original inoculation is made in the region of a growing zone. The growth of the infected tissue keeps pace with the growth of the organ. Unlike animal cancer, crown gall tissues do not produce infiltrating strands or secondary tumors. Efforts to produce secondary tumors by means of such devices as water soaking, slitting the growing points, and making long perforations in the growing zone, yield no secondary tumors or strands.

ARTHUR H. GRAVES,  
*Secretary.*

#### MEETING OF NOVEMBER 11, 1924

The meeting of this date was held at the American Museum of Natural History.

The resignation of Mr. Claude E. O'Neal was accepted.

The following candidates were elected to membership:

Mr. Edwin E. Matzke, 3075 Hull Avenue, New York, N. Y.

Mrs. Paula Milton, Wildwood, Katonah, New York.

Miss Helen E. Saunders, 454 Seventh Street, Brooklyn, N. Y.

Dr. M. A. Chrysler, Professor of Botany at Rutgers University, gave an illustrated lecture on "Collecting Cycads in Cuba," a trip which was made possible by assistance kindly furnished by the New York Academy of Sciences. The speaker stated that the trip occupied part of August and September of the

present year, and was restricted to the cycad fields of western Cuba, the Isle of Pines, and Florida. The chief object was the collection of material of *Microcycas*, the range of which is a very restricted one, although on the present occasion the plant was located at a much lower altitude than had been previously reported. A short description was furnished of the vegetation of a "mogote" or limestone butte, illustrated by those which occur in the vicinity of Viñales. Among the distinctive plants of these cliffs is *Zamia latifoliata*, while the common *Zamia* of the siliceous hills is *Z. Kicksii*. Lantern slides were used to illustrate the characteristic vegetation of the regions which were visited.

ARTHUR H. GRAVES,  
Secretary.

#### NEWS NOTES

Dr. James A. Faris, a member of the Club and for the past three years Research Fellow at the Brooklyn Botanic Garden, has been chosen by the trustees of the new Tropical Plant Research to have general supervision of all field work on tropical plant diseases, with particular reference, at present, to root rots of the sugar cane. In his investigations at the Brooklyn Botanic Garden along the line of smut disease of cereals, Dr. Faris made some valuable contributions of scientific and practical significance—in particular his discovery of physiological specialization of cereal smuts. He was appointed last June a National Research Fellow by the National Research Council to continue these investigations at the Brooklyn Botanic Garden. This position he has now resigned to take up again the work of tropical diseases for which his former experience as plant pathologist at the Estacion Agronomica of the College of Agriculture, Santo Domingo, renders him peculiarly well fitted. He is temporarily located at the Harvard Laboratory, Central Soledad, Cienfuegos, Cuba. The permanent location for the new tropical field research laboratory has not yet been fixed upon.

The Tropical Plant Research Foundation was incorporated on June 6, 1924. As stated in a recent announcement, its particular objects and business are "to promote research for the